REMARKS

Claims 1-16 are pending in the above-identified application.

Support for newly added claims

Support for newly added method claim 15 is found throughout the application as filed. Support for newly added apparatus claim 16 is found principally in Figure 1 wherein the names of the various elements are given. A description of the apparatus of figure 1 is found in the specification beginning on page 13, line 1 through about page 15, line 27.

Typographical Errors

The Examiner is thanked for pointing out the minor typographical errors in the specification. These have been corrected.

Rejections Under 35 U.S.C. § 112, Second Paragraph

In paragraphs 2 and 3 of the outstanding Office Action, the Examiner rejected selective claims generally because of presence of the term "chamber". This term has been replaced with the result that all claims rejected under 35 U.S.C. § 112 are now believed to be free of rejection.

Non-Obviousness Over Göhde in View of Farrell

In paragraphs 4, 5 and 6 of the outstanding Office Action,

the Examiner rejected claims 1-4, 5-7, 8-10 and 14 as being obvious over Göhde et al., USP 4,021,117 (hereinafter referred to as Göhde '117), in view of Farrell, USP 4,447,883 (hereinafter referred to as Farrell '883).

The Examiner candidly admits that Göhde '117 does not disclose a method of processing the raw data by using a true average flight time and a true average wait time to obtain a corrected count of particles. While this statement is candidly true, it does not tell the entire story. In fact, Göhde '117 discloses neither "true average flight time" nor "true average wait time".

It is notoriously well known to attempt to count small particles in a liquid sample employing the Coulter effect. To take advantage of this effect, a large number of prior art devices employ logic circuits to manipulate the raw data which is in the form of voltage pulses. When two particles follow each other closely through the aperture, it is not always possible to distinguish between the two pulses. This can result in what has been termed a "coincidence error". Such a coincidence error results in a machine determined number of particles which is less than the actual number of particles. Some particles are "lost". The problem is sometimes referred to as a "coincidence loss". Such coincidence losses are explained in the application as filed in general and are graphically illustrated in Figure 2a of the application as filed. The attention of the Examiner is

respectfully invited to the last two pulses of the four pulses shown in Figure 2a. There is a long-felt need in the art to correct for coincidence loss or to otherwise accurately determine the actual number of particles present in a sample.

Göhde '117 attempts to solve the coincidence loss problem in a manner completely different than that of the present invention. Göhde '117 does this by "measuring the maximum amplitude of each of the [voltage] signals" (Göhde '117 at column 8, line 4). Then Göhde '117 proceeds with "measuring the area under each of the [voltage] signals" (Göhde '117 at column 8, line 6). Thereafter, in order to further handle coincidence loss Göhde '117 then proceeds with "determining the ratio of the measurements of maximum amplitude to area" (Göhde '117 at column 8, line 8). The deficiencies in Göhde '117 are not supplied by Farrell '883.

Farrell '883 does not disclose a "true average flight time" as that term is employed in pending claim 1. Neither does Farrell '883 disclose "a true average wait time" as that term is also employed in pending claim 1. Assuming without deciding, as the Examiner argues, that a portion of the formula shown in Farrell '883 at column 4, lines 10-18 is equal to "wait time", the wait time of Farrell '883 is raw wait time, not true average wait time. Farrell '883 represents a different approach to the solution of the problem solved here. Farrell '883 is cited and distinguished in the application as filed. The attention of the Examiner is respectfully invited to the specification as filed, page 3, lines

3-21. In the specification, as filed, the disclosure of Farrell '883 is explained and the following conclusion reached. "Therefore the [Farrell '883] average flight time cannot be accurately determined from the [Farrell '883] Total Flight Time divided by the [Farrell '883] raw count."

There is no motivation in either Farrell '883 or Göhde '117 for combining their teachings. There is no reason to employ the various times of Farrell '883 in the disclosure of Göhde '117 because Göhde '117 is not concerned with flight times, but rather is concerned with the area under a curve. However, even assuming, *arguendo*, the obviousness of the combination, the result would still not be a subject matter within the scope of that claimed since Farrell '883 does not disclose "a true average flight time" nor does Farrell '883 disclose "a true average wait time" as those terms are employed in the instant case in the relevant claims.

The other claims there rejected are not obvious for the some reasons that claim 1 is not obvious.

Non-Obviousness over Graham in View of Farrell

The rejection of Claim 11 over Graham et al., USP 6,259,242 (hereinafter referred to as Graham '242) in view of Farrell '883 is traversed. Farrell '883 does not teach what is here claimed as explained supra. Combining the teachings of Farrell '883 with any other reference simply does not meet the terms of the claims. There is furthermore no motivation for combining the teachings

of these two references.

Non-Obviousness of Gear '129 in View of Jones '237

The rejection of claims 12 and 13 over Gear, USP 4,090,129 (hereinafter referred to as Gear '129) in view of Jones, Jr., USP 5,452,237 (hereinafter referred to as Jones '237) is respectfully traversed.

Gear '129 is not concerned with correcting raw pulse counts.

The coincidence error correction system of Jones '237 is not concerned with "true average wait time" or with "true average flight time" as those terms are employed in the pending claims.

It would not be obvious to combine the teachings of Jones '237 with those of Gear '129 since Gear '129 is not desirous of any count correction. Even if the teachings of Gear '129 and Jones '237 were combined, the result would still not be subject matter within the scope of claim 11.

References Not Applied

The Examiner has correctly recognized that none of the references cited in paragraph 9, either disclose or suggest claimed subject matter.

Summary

In summary, it is respectfully submitted that all grounds of rejection have been overcome by argument or amendment and that the

Examiner would be justified in passing the case to issue. Such action is earnestly solicited.

If the Examiner has any questions concerning this application, he is requested to contact the undersigned at (703) 205-8000 in the Washington, D.C. area.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

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GMM/DRM/bsh

Attachment: Version with Markings to Show Changes Made

VERSION WITH MARKING TO SHOW CHANGES MADE

IN THE SPECIFICATION:

The paragraph on page 13, lines 26-28 has been amended as follows:

The particle counter 12 is connected to comparator [18] 8 and average raw count generator 14. The particle counter 12 generates a raw count that is incremented by the rising or falling edge of each pulse in signal 10.

IN THE CLAIMS:

The claims have been amended as follows:

1. (amended) A method for counting particles, comprising the steps of:

successively passing multiple particles through a particle sensing zone;

introducing a first signal into said particle sensing zone for a period of time;

measuring a second signal emanating from said particle sensing zone, said second signal being caused by modulation of said first signal by said particles passing through said particle sensing zone;

generating raw data using said second signal, said raw data correlating to a raw count of particles passing through said [chamber] particle sensing zone, a wait time count and a size of

each particle; and

processing said raw data by using a true average flight time and a true average wait time to obtain a corrected count of particles.

5. (amended) The method of claim 1, wherein a sample containing multiple particles of sizes varying by more than 50% is passed through said measuring [chamber] particle sensing zone.

14. (amended) A method for counting particles, comprising the steps of:

successively passing multiple particles through a particle sensing zone;

introducing a first signal into said particle sensing zone for a period of time;

measuring a second signal emanating from said particle sensing zone, said second signal being caused by modulation of said first signal by said particles passing through said particle sensing zone;

generating raw data using said second signal, said raw data correlating to a raw count of particles passing through said [chamber] particle sensing zone, a wait time count and a size of each particle; and

performing coincidence correction by processing said row data by using a true average flight time.

Claims 15 and 16 have been added.